

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

:

Shuichi KAWASAKI

:

Attn: APPLICATION BRANCH

Serial No. NEW

:

Docket No. 2002-0325A

Filed March 8, 2002

:

ROTATION STABILIZING DEVICE IN A
MICROGRAVITATIONAL ROTATING
APPARATUS

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents,
Washington, DC 20231

Sir:

Prior to examination of the above-referenced U.S. patent application please amend the application as follows:

IN THE CLAIMS

Please amend the claims as follows:

17. (Amended) A rotation stabilizing device as claimed in Claim 14, wherein said spring mechanism comprises a casing side frame member fitted to said casing, a stationary side frame member fitted to said stationary side member and a spring connecting said casing side frame member and said stationary side frame member and said electromagnetically supporting mechanism has said exciting coil fitted to said casing side frame member and comprises a conductor fitted to said stationary side frame member so as to be inserted into said casing side frame member with a predetermined gap being maintained between said conductor and said casing side frame member.

18. (Amended) A rotation stabilizing device as claimed in Claim 14, wherein said spring mechanism uses one or more bar-like rod springs.

19. (Amended) A rotation stabilizing device as claimed in Claim 14, wherein said spring mechanism uses one or more bar-like coil springs.

20. (Amended) A rotation stabilizing device as claimed in Claim 14, wherein said spring mechanism uses one or more members made of rubber, plastics, etc. having a predetermined elasticity.

Please add the following new claims:

26. A rotation stabilizing device as claimed in Claim 15, wherein said spring mechanism comprises a casing side frame member fitted to said casing, a stationary side frame member fitted to said stationary side member and a spring connecting said casing side frame member and said stationary side frame member and said electromagnetically supporting mechanism has said exciting coil fitted to said casing side frame member and comprises a conductor fitted to said stationary side frame member so as to be inserted into said casing side frame member with a predetermined gap being maintained between said conductor and said casing side frame member.

27. A rotation stabilizing device as claimed in Claim 16, wherein said spring mechanism comprises a casing side frame member fitted to said casing, a stationary side frame member fitted to said stationary side member and a spring connecting said casing side frame member and said stationary side frame member and said electromagnetically supporting mechanism has said exciting coil fitted to said casing side frame member and comprises a conductor fitted to said stationary side frame member so as to be inserted into said casing side frame member with a predetermined gap being maintained between said conductor and said casing side frame member.

28. A rotation stabilizing device as claimed in Claim 15, wherein said spring mechanism uses one or more bar-like rod springs.

29. A rotation stabilizing device as claimed in Claim 16, wherein said spring mechanism uses one or more bar-like rod springs.

30. A rotation stabilizing device as claimed in Claim 17, wherein said spring mechanism uses one or more bar-like rod springs.

31. A rotation stabilizing device as claimed in Claim 26, wherein said spring mechanism uses one or more bar-like rod springs.

32. A rotation stabilizing device as claimed in Claim 27, wherein said spring mechanism uses one or more bar-like rod springs.

33. A rotation stabilizing device as claimed in Claim 15, wherein said spring mechanism uses one or more bar-like coil springs.

34. A rotation stabilizing device as claimed in Claim 16, wherein said spring mechanism uses one or more bar-like coil springs.

35. A rotation stabilizing device as claimed in Claim 17, wherein said spring mechanism uses one or more bar-like coil springs.

36. A rotation stabilizing device as claimed in Claim 26, wherein said spring mechanism uses one or more bar-like coil springs.

37. A rotation stabilizing device as claimed in Claim 27, wherein said spring mechanism uses one or more bar-like coil springs.

38. A rotation stabilizing device as claimed in Claim 15, wherein said spring mechanism uses one or more members made of rubber, plastics, etc. having a predetermined elasticity.

39. A rotation stabilizing device as claimed in Claim 16, wherein said spring mechanism uses one or more members made of rubber, plastics, etc. having a predetermined elasticity.

40. A rotation stabilizing device as claimed in Claim 17, wherein said spring mechanism uses one or more members made of rubber, plastics, etc. having a predetermined elasticity.

41. A rotation stabilizing device as claimed in Claim 26, wherein said spring mechanism uses one or more members made of rubber, plastics, etc. having a predetermined elasticity.

42. A rotation stabilizing device as claimed in Claim 27, wherein said spring mechanism uses one or more members made of rubber, plastics, etc. having a predetermined elasticity.

REMARKS

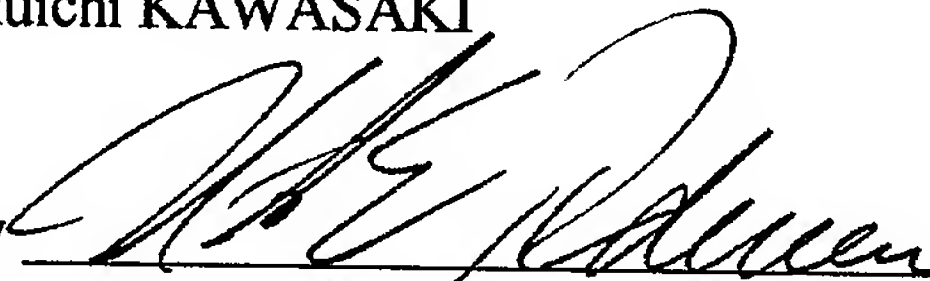
The present Preliminary Amendment is submitted to delete the multiple dependency of the claims, thereby placing such claims in condition for examination and reducing the required PTO filing fee.

Attached hereto is a marked-up version of the changes made to the claims by the current Preliminary Amendment. The attached page is captioned "**Version with Markings to Show Changes Made**".

Respectfully submitted,

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THE COMMISSIONER IS AUTHORIZED
TO CHARGE ANY DEFICIENCY IN THE
FEES FOR THIS PAPER TO DEPOSIT
ACCOUNT NO. 23-0975

Version with Markings to
Show Changes Made

1 16. A rotation stabilizing device as claimed in
2 Claim 14, wherein said vibration isolating device further
3 comprises a gap sensor detecting a gap between said casing
4 and said stationary side member and a control unit taking
5 detected signals of said gap sensor to detect signal
6 variations and putting out such drive signals as to cancel
7 said signal variations so that exciting current of said
8 exciting coil may be controlled by said drive signals to
9 thereby control to reduce vibration.

1 17. A rotation stabilizing device as claimed in^{claim 14}
2 [any of Claims 14 to 16], wherein said spring mechanism
3 comprises a casing side frame member fitted to said casing,
4 a stationary side frame member fitted to said stationary
5 side member and a spring connecting said casing side frame
6 member and said stationary side frame member and said
7 electromagnetically supporting mechanism has said
8 exciting coil fitted to said casing side frame member and
9 comprises a conductor fitted to said stationary side frame
10 member so as to be inserted into said casing side frame
11 member with a predetermined gap being maintained between
12 said conductor and said casing side frame member.

1 18. A rotation stabilizing device as claimed in^{claim 14}
2 [any of Claims 14 to 17], wherein said spring mechanism uses
3 one or more bar-like rod springs.

1 19. A rotation stabilizing device as claimed in

Claim 14

2 [any of Claims 14 to 17], wherein said spring mechanism uses
3 one or more bar-like coil springs.

1 20. A rotation stabilizing device as claimed in^{Claim 14}
2 [any of Claims 14 to 17], wherein said spring mechanism uses
3 one or more members made of rubber, plastics, etc. having
4 a predetermined elasticity.

1 21. A rotation stabilizing device as claimed in
2 Claim 1, wherein said rotation stabilizing means is a
3 safety device interposed between said rotary shaft and
4 said plurality of arms and, if said rotary shaft stops
5 suddenly, said safety device disconnects said rotary shaft
6 and said plurality of arms from each other so that said
7 plurality of arms may rotate freely from said rotary shaft.

1 22. A rotation stabilizing device as claimed in
2 Claim 21, wherein said safety device comprises an actuator
3 fitted within each of said plurality of arms, a pin fitted
4 to an end of a rod of said actuator and a sensor detecting
5 a rotation of said rotary shaft and, when said rod of said
6 actuator elongates to thereby cause said pin of the rod
7 end to engage with a pin hole provided in said rotary shaft,
8 said plurality of arms become rotatable together with said
9 rotary shaft and, if said rotary shaft stops suddenly, said
10 rod is retracted, based on a signal from said sensor, to
11 thereby disengage said pin from said pin hole.

1 23. A rotation stabilizing device as claimed in